

Absorb Physics for A-level



Subject area

General Physics.

Description

A multimedia A-level physics course.

Authors

Adrian Watt.

Suppliers/Distributors

Crocodile Clips
(<http://www.crocodile-clips.com/index.htm>).

Date/Version

2002.

Level

A-level, access, undergraduate.

Type of package

Computer assisted learning.

Price

Site Licence £350-£650
depending on number of pupils.

Hardware required

Windows-compatible PC, Pentium processor or higher, 32MB RAM, 30MB free disk space.

Software required

Windows 98 or later, Internet Explorer 5 or later (compatible with Microsoft Class Server).

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November 2004

Whilst the intended audience for this package is GCE A-level students in the UK; its range of activity, from simple mechanics to quantum phenomena, make it of use well beyond this. Foundation year students, first year undergraduates and trainee teachers following a post graduate (PGCE) course will all find sections of this package useful.

The tutorial nature of the package makes it ideal for independent or directed self study with the embedded questions giving instant feedback.

The animations and laboratory simulations, however, make this package truly outstanding. Students can perform laboratory based investigations on screen without needing access to any apparatus. Whilst this will obviously not replace the traditional laboratory class it does allow for more flexible self study and the option of greater interaction during a lecture or seminar presentation.

Summary Review

range: * poor to ***** good

Ease of use	*****
Ease of learning	*****
Documentation quality	*****
Academic content	*****
Usefulness to student	*****
Usefulness to teacher	*****
Portability	*****
Meets objectives	****
Accuracy	*****



fig 1: An example animation showing the Doppler Effect

Having used this package with trainee physics teachers and an interactive whiteboard the feedback from the students was overwhelmingly positive. Those with a strong physics background commented on the new insight provided and those from an engineering background commented on the ease with which it refreshed past knowledge or got them up to speed in new topics.

The content of all sections used appears to be on a par with the best texts in terms of both coverage and accuracy. Overall I would recommend all schools with post sixteen students and all HEIs offering physics or subjects allied to physics obtain a copy for their resource area.

Absorb Physics for GCSE



Subject area
General Physics.

Description
A multimedia GCSE physics course.

Authors
David Fairhurst.

Suppliers/Distributors
Crocodile Clips
(<http://www.crocodile-clips.com/index.htm>).

Date/Version
2002.

Level
Secondary.

Type of package
Computer assisted learning.

Price
Site Licence £350-£650
depending on number of pupils.

Hardware required
Windows-compatible PC, Pentium processor or higher, 32MB RAM, 30MB free disk space.

Software required
Windows 98 or later, Internet Explorer 5 or later (compatible with Microsoft Class Server).

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“Absorb Physics” is a complete multimedia based GCSE physics course. It should, however, be noted that this product has been reviewed with the Scottish examination courses in mind. In this respect, although it does not make for a complete course in its own right, the content allows for use in both the Standard Grade and more advanced Higher Still courses. The program can be installed in two forms: a basic stand alone version and a second version (not reviewed) compatible with the Microsoft Class Server (MCS) system. The site license for the program allows for student copies to be made and distributed as seen fit.

Summary Review

range: * poor to ***** good

Ease of use	*****
Ease of learning	*****
Documentation quality	***
Academic content	*****
Usefulness to student	*****
Usefulness to teacher	*****
Portability	*****
Meets objectives	*****
Accuracy	*****

The program itself is divided into a number of different sections covering topics from motion and forces to atomic theory and radioactivity. Each section is further split into subsections comprising of areas of text with questions to check the progress of learning. These questions are structured to cover a range of abilities and allow for some degree of differentiation. The questions are marked by the program and so allow for instant feedback to the student. One drawback is that the program allows the answers to be changed at any time which may encourage some to guess until the correct answer is found. The version reviewed also allowed no feedback to the teacher making it difficult to keep track of individual student progress. It is believed that this is not the case with the MCS compatible version. This version also allows the teacher to set some of these questions as homework and for the answers to be emailed to the teacher for subsequent checking. Each subsection also includes a number of animations and simulations with which to develop students' understanding. The animations are Flash compatible and it is here I feel that the program is truly useful. These animations can be projected via a multimedia projector to allow students to visualise some important physics. For example, I have made good use of a scaled up animation of a reed relay to show the magnetic effect of current in a wire.

The computer simulations are also useful for individual and pair work and work via an included viewer so it is not necessary to have Crocodile Clips installed. A number of experiments can be carried out from projectiles and Newton's Canon to balanced see saws. Again it is possible to project these simulations for large group work. Both animations and simulations can be quickly accessed as stand alone sections removed from any distracting text.

The program includes a useful on-line tutorial to explain the basic workings of the program although the user interface is intuitive and easy to use. The program also contains an online glossary which is cross referenced to the individual course topics.

In summary, I believe that “Absorb Physics for GCSE” is very useful as a full teaching package for use, for example, with absent students or as an occasional resource to dip in to when necessary. The animations and simulations are excellent for multimedia projection and, from personal experience, are effective in illustrating areas where an equipment based class demonstration may be difficult. In all, a good program and worth the money.